DEPARTMENT OF DEFENSE (AFHSC)

Detecting and Reporting DoD Cases of Chikungunya Infection: Guidance as of 25 JUL 2014

1. **Diagnosis**:

- Consider chikungunya virus infection in patients with acute onset of fever and polyarthralgia, especially travelers who have returned within two weeks from areas with virus transmission (CDC). Preliminary diagnosis should be based on the patient's clinical features, activities, as well as places and dates of travel.
- Check for dengue. Proper treatment of dengue (WHO guidelines) can improve outcomes. Dengue and chikungunya viruses are transmitted by the same mosquitoes and have similar clinical features. The two viruses often circulate in the same area and can cause occasional co-infections in the same patient. Chikungunya virus infection is more likely to cause high fever, severe arthralgia, arthritis, rash, and lymphopenia, while dengue virus infection is more likely to cause neutropenia, thrombocytopenia, hemorrhage, shock, and death. Co-infections may include any of these symptoms.
- Differential diagnoses include leptospirosis, malaria, rickettsia, group A streptococcus, rubella, measles, parvovirus, enteroviruses, adenoviruses, other alphaviruses (e.g. Mayaro), post-infection arthritis, and rheumatologic conditions.

2. **Clinical Diagnostic Testing:**

- USAMRIID Special Pathogens Laboratory (SPL)
  usarmy.detrick.medcom-usamriid.mbx.special-pathogens-lab@mail.mil
  301-619-3318 (DSN 343)
  For sample submission please use the SPL Form.

- NMRC Navy Infectious Disease Diagnostic Laboratory (NIDDL)
  LCDR Todd Myers
  todd.myers@med.navy.mil
  301-319-7447 (DSN 285)

If a non-DoD lab is used, saving an aliquot of refrigerated serum for DoD lab characterization is highly recommended.

3. **Reporting:**

- Confirmed cases of chikungunya infection should be reported through the chain-of-command and the appropriate Service-specific public health POCs:

  - Navy Environmental Preventive Medicine Unit or
    Navy and Marine Corps Public Health Center Threat Assessment
    threatassessment@med.navy.mil
    757-953-0700 (DSN 377-0700)

  - U.S. Air Force School of Aerospace Medicine
    Epidemiology Consult Service
    episervices@wpafb.af.mil
    937-938-3207 (DSN 798-3207)

  - Army Institute of Public Health
    Disease Epidemiology Program

usarmy.apg.medcom-phc.mbx.disease-epidemiologyprogram13@mail.mil
410-417-2377 (DSN 867-2377)

- File a report in the Disease Reporting System Internet (DRSi) as "any other unusual condition", and include in the report clinical presentation, travel history, and hospital admission status/dates.

- Review local civilian reporting requirements in order to improve cross communication, facilitate diagnosis, and mitigate the risk of local transmission (e.g., Florida requires state reporting).

4. Surveillance:

Use the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) or Medical Situational Awareness in Theater (MSAT) to monitor febrile illnesses in the population for any increases. An ESSENCE account can be created here. Create an ESSENCE or MSAT syndrome group with ICD-9 codes and investigate upticks for potential chikungunya risk factors.

- ICD-9-CM 066.3 "Other mosquito-borne fever" (includes chikungunya fever)
- ICD-9-CM 065.4 "Mosquito-borne hemorrhagic fever" (includes chikungunya hemorrhagic fever)
- ICD-9-CM 062.8 "Other specified mosquito-borne viral encephalitis" (chikungunya encephalitis)

Since ESSENCE captures only outpatient data, evaluate hospitalized individuals with acute febrile disease, polyarthralgia, and travel to endemic areas. MSAT monitors both outpatient and inpatient populations.

5. Mosquito Surveillance, Entomology, and Environmental Lab Support Points of Contact:

- U.S. Army Public Health Command has five regional commands, all of which have Entomological Sciences Divisions that perform mosquito-borne disease surveillance. Four of the five regional commands have laboratories capable of PCR testing for chikungunya in mosquito pools (the fifth lab can quickly set up capability).

    - For environmental laboratory support:
      LTC Robert Richards
      robert.s.richards.mil@mail.mil
      410-436-5060 (DSN 584-5060)

    - Tom Burroughs
      Manager, Entomological Sciences Program
      thomas.m.burroughs.civ@mail.mil
      410-436-3613 (DSN 584-3613)

- U.S. Air Force School of Aerospace Medicine (USAFSAM)
  Dr. Will K. Reeves, Entomologist
  will.reeves@us.af.mil
  Epidemiology Consult Services
  937-938-3071 (DSN 798-3071)

- Navy and Marine Corps Public Health Center has four regional NEPMUs which provide operational services in entomology. Additionally, the Navy Entomology Center of Excellence provides expertise for operational disease vector surveillance, control, and training.

    - LT Marcus McDonough
      Officer in Charge, Navy Entomology Center of Excellence
      marcus.mcdonough@med.navy.mil
      904-542-0355

- CAPT Eric R. Hoffman
  Chair, Armed Forces Pest Management Board
  eric.hoffman@med.navy.mil
  904-542-4626

6. Other Resources:

- U.S. Army Public Health Command has a fact sheet on chikungunya available on their website.
- U.S. Naval Medical Research Unit 6 (NAMRU6) in Peru has diagnostic capabilities, can support outbreak investigations, and has contacts in numerous regional ministries of health in Central and South America.
- CDC guidelines for health professionals on the evaluation of infections with chikungunya are found on their website. CDC guidelines for laboratory diagnosis involve testing serum or plasma samples to detect virus, viral nucleic acid, or virus-specific immunoglobulin M and neutralizing antibodies.
- Please see the WHO Global Alert and Response chikungunya website for worldwide chikungunya outbreak information.

7. Risk communication and preparation considerations:

- Beneficiaries living in or traveling to higher risk areas should know prevention methods for chikungunya virus, which is transmitted by mosquitoes. See CDC prevention guidelines.
- There is no antiviral treatment or vaccine currently available for chikungunya. Prevention relies on effective mosquito control and avoidance of vectors. Use insect repellent containing DEET or picaridin; wear long sleeves and long pants treated with permethrin for added protection; and limit outdoor activities in order to prevent mosquito bites, decreasing the risk of dengue and chikungunya infection.
- DoD health care providers in higher risk areas and areas that receive travelers from chikungunya-endemic areas should know the clinical manifestations of chikungunya, how to obtain confirmatory laboratory testing, and how to treat the disease.
- Historical data suggests 5-10% of affected patients go on to chronic rheumatological complications underscoring the importance of preventative measures.
- Installations should be prepared to carry out necessary mosquito surveillance programs and to execute any appropriate mosquito control operations to reduce the size of vector populations and prevent spread of the virus.
- The U.S. Armed Forces Pest Management Board (AFPMB) provides up-to-date guides on insect repellents, as well as chikungunya and dengue control.

8. AFHSC POCs:

Contact the AFHSC's Division of Integrated Biosurveillance (AFHSC/DIB) or the Division of Global Emerging Infections Surveillance & Response Systems (AFHSC/GEIS):

Email: usarmy.ncr.medcom-afhsc.list.dib.alert-response@mail.mil
Dr. Rohit A. Chitale, Director, (AFHSC/DIB): 443-253-0525; desk: 301-319-3241; BB: 240-507-7492
Dr. Stic Harris, Team Lead, Alert & Response Operations (AFHSC/DIB): 301-319-3297
Maj Kevin Haines, USAF, Assistant Director (AFHSC/DIB): 301-319-3288
CDR Jeffrey McCollum, Lead, Vector Borne Disease Surveillance (AFHSC/GEIS): 301-319-3267